

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): An electric cell comprising a positive electrode, a negative electrode containing aluminum or aluminum alloy, and an electrolyte arranged between the positive electrode and the negative electrode, wherein

the electrolyte includes:

at least one ion selected ~~from a~~ from the group consisting of a sulfate ion (SO_4^{2-}) and a nitrate ion (NO_3^-); and

an additive selected ~~from a~~ from the group consisting of an organic acid, a salt of the organic acid, ~~an~~ a hydrate of the organic acid, an ester of the organic acid, an ion of the organic acid, and derivatives thereof.

Claim 2 (Currently Amended): An electric cell comprising a positive electrode, a negative electrode containing aluminum or aluminum alloy, and an electrolyte arranged between the positive electrode and the negative electrode, wherein

the electrolyte includes at least one ion selected ~~from a~~ from the group consisting of a sulfate ion (SO_4^{2-}) and a nitrate ion (NO_3^-); and

the surface of the negative electrode is contacted with one selected from the group consisting of an organic acid, a salt of the organic acid, ~~an~~ a hydrate of the organic acid, an ester of the organic acid, an ion of the organic acid, and derivatives thereof.

Claim 3 (Currently Amended): The electric cell as claimed in Claim 1, wherein the additive includes:

at least one functional group selected from the group consisting of a carboxylic group (COOH), a sulfonic group (SO₃H), a hydroxyl group (OH), and a nitro group (NO₂); and a derivative thereof.

Claim 4 (Currently Amended): The electric cell as claimed in Claim 2, wherein the surface of the negative electrode is contacted with at least one functional group selected from the group consisting of a carboxylic group (COOH), a sulfonic group (SO₃H), a hydroxyl group (OH), and a nitro group (NO₂); and a derivative thereof.

Claim 5 (Currently Amended): The electric cell as claimed in Claim 1, wherein the ~~additives are~~ additive is a polymeric compound ~~and~~ or a derivative thereof.

Claim 6 (Currently Amended): The electric cell as claimed in Claim 2, wherein the surface of the negative electrode is contacted with a polymeric compound ~~and~~ or a derivative thereof.

Claim 7 (Original): The electric cell as claimed in Claim 1 or Claim 2, wherein the electrolyte contains a halogen ion.

Claim 8 (Currently Amended): An electric cell comprising a positive electrode, a negative electrode containing aluminum or aluminum alloy, and an electrolyte arranged between the positive electrode and the negative electrode, wherein

the electrolyte includes at least one ion selected ~~from a~~ from the group consisting of a sulfate ion (SO_4^{2-}) and a nitrate ion (NO_3^-); and

the surface of the negative electrode includes an oxide layer containing at least one element selected ~~from a~~ from the group consisting of chromium, sulfur, nitrogen, boron, carbon, and phosphorus.

Claim 9 (Currently Amended): The electric cell as claimed in Claim 8, wherein the negative electrode includes an oxide layer containing:

at least one of an organic acid selected ~~from a~~ from the group consisting of sulfuric acid, nitric acid, oxalic acid, chromic acid, boric acid, phosphoric acid, carbonic acid, sulfosalicylic acid, maleic acid, acetic acid, and carboxylic acid;

an ion of the organic acid;

a salt of the organic acid; and

derivatives thereof.

Claim 10 (Currently Amended): A cell ~~comprising~~ comprising a positive electrode, a negative electrode containing aluminum or aluminum alloy, and an electrolyte arranged between the positive electrode and the negative electrode, wherein

the electrolyte includes:

at least one ion selected ~~from a~~ from the group consisting of a sulfate ion (SO_4^{2-}) and a nitrate ion (NO_3^-); and

an additive, ~~where the additive includes one~~ selected from the group consisting of:

a heterocyclic organic compound containing nitrogen; ~~and~~ ,
a nitrogen-containing organic compound containing at least one functional group selected ~~from a~~ from the group consisting of an amino group, an imino group, an azi group, and an azide group,

an ion of the nitrogen-containing organic compound,
a salt of the nitrogen-containing organic compound, and
a derivative of the nitrogen-containing organic compound.

Claim 11 (Currently Amended): The electric cell as claimed in ~~one of Claims 1, 2, 8,~~
~~and 10~~ Claim 1, wherein

the negative electrode comprises aluminum alloy with at least one metal selected ~~from~~
a from the group consisting of Mn, Cr, Sn, Ca, Mg, Pb, Si, In, and Zn.

Claim 12 (Original): The electric cell as claimed in Claim 9, wherein thickness of the oxide layer is from 0.1 nm to 1,000,000 nm.

Claim 13 (Currently Amended): The electric cell as claimed in Claim 12,
~~wherein thickness~~ wherein thickness of the oxide layer is from 5 nm to 50,000 nm.

Claim 14 (Currently Amended): The electric cell as claimed in Claim ~~12~~ 8,
~~wherein the amount of the organic acid to be introduced into~~ wherein the oxide layer satisfies
 ~~$10^{-11} \leq y \leq 0.1$, when the composition of an oxide coating film is defined as $Al_2O_3 + zXy$~~
~~where X denotes~~ comprises an aluminum oxide including at least one element selected from
the group consisting of Cr, S, N, B, C, or B and P, and ~~Z is a given number.~~

Claim 15 (Currently Amended): The electric cell as claimed in Claim 3, wherein the
additive is at least one selected ~~from a~~ from the group consisting of:

methyl alcohol, ethyl alcohol, propyl alcohol, butyl alcohol, phenol, glycerol, glycolic
acid, ethylene glycol, formic acid, acetic acid, propionic acid, oxalic acid, salicylic acid,
sulfosalicylic acid, malic acid, tartalic acid, succinic acid, fumaric acid, phthalic acid,
malonic acid, citric acid, maleic acid, lactic acid, butyric acid, pyruvic acid, benzoic acid,
sulfobenzonic acid, nitromethane, sulfoaniline, sulfonyl nitrobenzene, polyvinyl alcohol,
vinyl acetate, vinyl sulfonate, poly (sulfonate vinylbenzene), poly(vinyl acetate), methyl
acetate, acetic anhydride, maleic anhydride, phthalic anhydride, diethyl malonate, sodium
benzoate, sodium sulfobenzoate, sulfoaniline chloride, chlorethyl acetate, dichlormethyl
acetate, poly (vinyl acetate potassium salt), poly (styrene lithium sulfonate), polyacrylate, and
lithium polyacrylate.

Claim 16 (Original): The electric cell as claimed in Claim 3, wherein concentration
of the additive in the electrolyte is from 0.0001 to 40 % by weight.

Claim 17 (Original): The electric cell as claimed in Claim 3, wherein concentration of the additive in the electrolyte is from 0.0001 to 30 % by weight.